United Nations E/2000/73

Economic and Social Council

Distr.: General
28 June 2000
Original: English

Substantive session of 2000
New York, 5 July-1 August 2000
High-level segment
Item 2 of the provisional agenda*
Development and international cooperation in the twenty-first century: the role of information technology in the context of a knowledge-based global economy

Contribution of the Economic and Social Commission for Asia and the Pacific to the theme of the high-level segment of the substantive session of 2000 of the Economic and Social Council

Development and international cooperation in the twenty-first century: the role of information technology in the context of a knowledge-based global economy

A regional perspective

Summary

The President of the Economic and Social Council for 2000, in consultation with the Bureau, requested the regional commissions to hold regional intergovernmental or expert group meetings on information technology for development in their respective regions and to report on the outcome of those meetings to the Council at its high-level segment in order to provide a regional perspective on the theme of the high-level segment, "Development and international cooperation in the twenty-first century: the role of information technology in the context of a knowledge-based global economy".

* E/2000/100.

00-50989 (E) 030700

All five regional commissions have submitted brief reports based on regional consultative meetings or on views solicited from their member States. The meetings of the ESCAP and ECLAC regions were hosted by the Governments of India and Brazil, respectively, on 20 and 21 June 2000. ECA held a high-level meeting, the first African Development Forum, from 24 to 28 October 1999 with the theme "The challenge to Africa of globalization and the information age". ESCWA held its expert group meeting on 15 and 16 May 2000. ECE circulated a draft report to all its member States and the comments received have been integrated in the Commission's report to the Council.

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I. Major recommendations, conclusions and decisions for the consideration of the Economic and Social Council

1. Taking cognizance of the growing digital divide that threatens to further marginalize the developing countries and exclude them from the revolution in information technology (IT), the Regional Round Table on Information Technology and Development adopted the following recommendations:

(1) The problems and issues faced by countries in the region in terms of readiness for the digital era should be systematically identified, and awareness of those problems and issues should be created, in order to assist interested countries to identify the areas where action is needed and to carry out the necessary interventions.

A system should be introduced of publishing a single composite index of readiness of each country for the digital era. That index would be a suitably weighted average of the scores on various relevant parameters, including the following:

(a) Access facilities, including:

(i) Information infrastructure; basic telecommunication infrastructure;

(ii) Internet availability and affordability;

(iii) Network speed and quality; bandwidth availability;

(iv) Availability of hardware, software, services and support in the local market;

(b) Education and training facilities;

(c) Networking of the society: incorporation of information and communication technology (ICT) into the way that things are done in the society, the economy and government and the proliferation of online communities;

(d) Network policy: a supportive policy environment, including telecommunications policy and cyber-laws;

(e) Evolution of appropriate ownership and management models of network resources;

(f) Evolution of appropriate business models that spur the flow of private investment into the digitalization of the society and economy;

(g) Degree of optimization of costs by full use of economies afforded by the convergence of technologies: scope for cost reduction and increasing the spread and reach of network access.

International or regional bodies such as the Economic and Social Commission for Asia and the Pacific (ESCAP) should undertake this task. The scores on individual parameters would clearly point to the set of actions necessary. The exercise suggested above could evaluate the success of steps already taken and identify new measures needed or generate a set of options for action. It would be up to national Governments to respond suitably to the identified challenges.

(2) Extensive human resources development initiatives in the region should be encouraged and facilitated.

People, not machines and computers, drive the entire ICT revolution. It is therefore essential to ensure that a large number of trained personnel are available to power the revolution. The specific requirements are highly variable in terms of time and context, and for this and various other reasons, programmes in this regard need to maximize the use of private sector competencies and entrepreneurship to build up continuously the necessary human resources. Creative partnerships between Governments, non-governmental organizations and private sector companies are essential, but Governments need to provide the impetus.

(3) Successful innovation should be encouraged in community and private sector participation in integrating ICT into the economy and society and in developing creative models of partnership between government, the private sector and non-governmental organizations.

Technology and cost are not the only issues relevant to the digitalization of societies and economies. Encouraging and selectively funding experiments, particularly in socially useful and relevant areas such as rural education, agriculture, medical services and employment that aim to creatively optimize cost, technology, ownership and management patterns, and business models in an integrated fashion

are necessary to speed up the diffusion of ICT in developing countries. Those models need to take full advantage of the following:

(a) The unique global competitive advantage that the Asian and Pacific region has in the field of IT-enabled services;

(b) The market for IT products and services that the growing economies of the region offer;

(c) The unprecedented opportunities for quantum reduction in costs through convergence of information, communications and entertainment (ICE) technologies and businesses. Less developed countries stand to gain more in this respect.

(4) While encouraging e-governance and community participation, the following socially relevant areas should be targeted to develop and demonstrate cost-effective integrated (convergence-based) solutions based on ICE technologies:

(a) Education on demand, particularly in rural areas;

(b) Health care, particularly in rural areas;

(c) Environmental education;

(d) Traditional knowledge dissemination and sharing;

(e) Government services (e-governance);

(f) Rural employment through IT-enabled services;

(g) Community entertainment facilities.

(5) Special programmes should be undertaken to enable landlocked and island countries to take full advantage of the location-independence of digital economic opportunity.

ICT offers a unique opportunity for countries to free themselves from the tyranny of geography. Employment opportunities in IT-enabled services, for example, are as accessible to island or landlocked countries as to any other country. Similarly, goods and services from such countries can be offered on the global market as efficiently as those from any other country through the use of ICT. Special programmes need to be designed to enable them to take advantage of this opportunity.

(6) Special programmes should be undertaken to exploit the manufacturing and service opportunities afforded by ICT to small and medium-sized enterprises (SMEs) to compete in the global marketplace.

ICT has created a level playing field for big and small companies alike in the global marketplace. No longer does a company need to have a physical presence globally (which is expensive). A presence in cyberspace is good enough to provide access to global markets. Many SMEs with good, globally competitive products or services languish because of their ignorance of how to use ICT to plug into the global marketplace. A special programme to create the requisite awareness, competencies and other support structures for SMEs for this purpose is highly desirable.

(7) Channels should be created for sharing experience and information, and for the development of norms and standards towards international standardization, wherever applicable; and a forum should be organized for experts, academicians, business representatives and government policy makers to meet periodically on a regional basis.

To foster regional cooperation, a project could be launched by a body such as ESCAP to enable sharing of experience among countries in the region on preparing for the digital era. ICT (web sites, bulletin boards, databases, etc.) should be used for this purpose, but workshops, conferences and round tables would also be needed to allow direct interaction periodically. The initiatives of ESCAP in trade facilitation are a good analogy. This forum could become a mechanism to address regional issues such as legal frameworks, norms and standards. Suitable modalities would need to be worked out for the creation and maintenance of the databases and information bases.

(8) Suitable technical assistance and technology transfer programmes should be designed to harness intraregional competencies to facilitate the transition of member countries into networked societies and economies.

One of the weakest links in designing appropriate policies to hasten the transition to a digital economy or society is the lack of sufficient expertise within Governments to deal competently with the complex issues involved. A minimum level of competence is needed even to access and assimilate expertise available in the market. Where Governments seek

technical assistance to carry the process forward, international bodies such as ESCAP could maintain panels of experts in the region that could assist the efforts of national Governments in countries that do not have the requisite expertise. The experience of developing countries such as India, which are believed to be forging ahead, could be used to foster South-South cooperation in this field.

(9) National/local language interface should be encouraged to facilitate the rapid diffusion of ICE technologies.

Communicative translation models and technologies available in the United Nations system and in member countries should be fostered and disseminated to countries in the Asian and Pacific region through a suitable programme to facilitate the rapid diffusion of new technologies.

(10) A special fund should be created at the regional level to facilitate the achievement of the objectives envisaged in the above recommendations.

The identification of necessary interventions and assistance in carrying out the identified interventions need funding. While the basic philosophy is to use private sector funding and enterprise as far as possible, demonstration projects and social sector projects will need funding. The idea is to use such funding to creatively synergize government, non-governmental organization and private sector resources and competencies through demonstration pilot projects.

II. Proceedings of the Regional Round Table

2. The Regional Round Table had before it two documents: (a) "Information technology and development I: commercial and industrial dimensions" (items 4, 5 and 6 of the agenda); and (b) "Information technology and development II: capacity-building, cooperation and social dimensions" (items 7 and 8 of the agenda). In addition, presentations were made on consensus-building, awareness creation and human resources development for adoption and use of IT; "Implications of IT-led development for new competitiveness development and management of new products and services; technical imperatives, gaps and affordability for IT and development; and characteristics of a knowledge-based economy and knowledge management for development.

A. Information technology and development I: commercial and industrial dimensions

3. In introducing the document, the secretariat described the current status of the diffusion of information technology in the region and the potential for the future introduction of IT. As advances in IT and electronic commerce could lead to significant improvement in the commercial and industrial sectors, open new marketing and employment opportunities and result in a rise in the living standards of the population, national capabilities to transfer, develop and benefit from the application of those technologies differed significantly among the countries of the region. Concerted national and complementary efforts through regional cooperation were required to promote widespread adoption of IT in the countries of the region. A number of national and regional actions were therefore suggested.

4. The Regional Round Table was of the view that, as IT was one of the main driving forces of globalization, it had a significant effect on the comparative advantage of countries and the competitiveness of their economies because of its enormous economic and social implications. It also brought significant change to markets, production, services and skill requirements, expanded educational opportunities and improved the quality of life. Although IT was expected to diminish both the skilled and the unskilled aspects of many traditional trades, it also created a demand for many new jobs. In that regard, 10 new and emerging ICT systems were described that could yield major enhancements in productivity and competitiveness in the commercial and industrial sectors.

5. The Regional Round Table stressed the need for the creation of a favourable policy framework conducive to the adoption and diffusion of IT development, citing requisite technological capability and competent human resources, in particular, as well as the creation of infrastructure for IT at the national and regional levels. While emphasizing the vital importance of Governments in that endeavour, the Regional Round Table expressed the strong belief that

all stakeholders should be involved in the adoption and diffusion of information technology and that the public and private sectors should be encouraged to participate in human resources development, research and development, and decision-making processes, and play a leading role in technology transfer and its application.

6. The Regional Round Table held the view that regional cooperation could significantly complement national efforts in the adoption and diffusion of information technology. For the successful implementation of national technology initiatives, it might be useful to work with neighbouring countries, particularly with regard to the creation of an information hub. Furthermore, regional cooperation was required for sharing data, information and experiences, and pooling resources for the adoption and transfer of information technology. In that connection, the Regional Round Table observed that, in general, the following areas of cooperation could be beneficial to countries in the region and the region as a whole: networking of regional libraries, regional language interface with computers, standardization of interfaces, human resources development, and a regional electronic data interchange network. It was also suggested that a regional fund for the promotion of transfer and diffusion of information technology could be considered and established.

7. The Regional Round Table suggested that, taking into account resource constraints, the efforts of ESCAP should be concentrated on meeting the most important and urgent needs of the countries of the region. Development of human resources was identified as a main priority area. Other priority areas for ESCAP activities included sharing of data and experiences, assessment of the implications of IT diffusion for economic and social development, analysis of obstacles for international technology transfer, including the implications of the international trading regime, standardization and electronic data interchange networks. Regional activities should initially include joint projects, seminars, workshops and training of trainers, and then evolve into demonstration projects for policy makers and technicians.

8. The Regional Round Table observed that the least developed countries, island economies and economies in transition especially required assistance in developing their technology capabilities and, in particular, human resources development for the transfer, adaptation and use of IT. ESCAP, in cooperation with the Asian and Pacific Centre for Transfer of Technology, and all interested more developed countries of the region, should design special programmes for the less developed economies in the region, utilizing bilateral, tripartite and other forms of cooperation as necessary.

B. Information technology and development II: capacity-building, cooperation and social dimensions

9. The Regional Round Table observed that the global economy was increasingly becoming knowledge-based and that knowledge was now widely regarded as the key to sustained development and growth of economies, as well as individuals. Capital accumulation was no longer seen as the main determinant of growth, but knowledge was. The spectacular advances in ICT and the convergence of those technologies, together with the advent of the Internet, had also resulted in the creation of a huge global knowledge pool.

10. The Regional Round Table noted that the ever-evolving and increasingly powerful ICT had fundamentally changed the nature of global relationships, sources of competitive advantage and opportunities for economic and social development. Technologies such as the Internet, personal computers and wireless telephony had turned the globe into an increasingly interconnected network of individuals, firms, schools and Governments communicating and interacting with one another through a variety of channels.

C. Other presentations

11. The Regional Round Table noted the potential contribution to social development that could be made by such ICT applications as telemedicine, tele-education, telework and digital libraries. ICT (and, in particular, the Internet through cyber-kiosks in rural areas) could help to improve the population's health, education and training and to enhance the transparency of the decisions and actions taken by public and private agents in developing countries of the Asian and Pacific region. That could be achieved through the use of ICT, which would help to foster effective linkages among

Governments, the private sector, non-governmental organizations and civil society. However, the penetration, use and impact of ICT were, in turn, determined by economic, technological and social variables.

12. The Regional Round Table noted that the digital divide was posing a major challenge to developing countries and recognized the imperative need to take action to address that concern. It was noted that the sweeping changes in connection with ICT that were occurring in the Asian and Pacific region as it made its transition to an information- and knowledge-based society were marked by significant distributional inequities, both across and within countries. The cost and coverage of telecommunications, of the electrical power infrastructure, and of training human resources and preparing SMEs to function in the digital economy varied widely from country to country. The Regional Round Table appreciated the fact that knowledge was becoming a key resource that needed to be managed effectively. Consequently, changes were necessary in organizational structures in the public and private sectors to enable them to manage knowledge efficiently in an information society.

III. Organization of the Regional Round Table

A. Opening and duration of the Regional Round Table

13. The Regional Round Table on Information Technology and Development was held in New Delhi on 21 and 22 June 2000.

14. The Regional Round Table was opened by Pramod Mahajan, Minister for Information Technology and Parliamentary Affairs of the Government of India, who also delivered the keynote address. The opening statement was made by Kayoko Mizuta, Deputy Executive Secretary of ESCAP. P. V. Jayakrishnan, Secretary of the Ministry of Information Technology of the Government of India, Makarim Wibisono, President of the Economic and Social Council, Ryokishi Hirono, Professor Emeritus at Seikei University, Japan, and Shekhar Bajaj, President of the Associated Chambers of Commerce of India, also addressed the Regional Round Table.

15. The Regional Round Table expressed its full appreciation for the generous support provided and arrangements made by the Government of India in organizing the event.

B. Attendance

16. The Regional Round Table was attended by representatives of the following members and associate members of ESCAP: Afghanistan, Australia, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Democratic People's Republic of Korea, France, Germany, India, Indonesia, Islamic Republic of Iran, Japan, Kazakhstan, Lao People's Democratic Republic, Mongolia, Myanmar, Netherlands, Pakistan, Papua New Guinea, Republic of Korea, Russian Federation, Singapore, Thailand, Tonga, United States of America, Uzbekistan, Vanuatu and Viet Nam.

17. In addition, representatives of the following bodies and organizations attended: Economic and Social Council, United Nations Development Programme, United Nations Educational, Scientific and Cultural Organization, Association of South-East Asian Nations, Asian Development Bank, Asia-Pacific Telecommunity and World Association for Small and Medium Enterprises.

C. Election of officers

18. On the basis of consultations, the following officers were elected by the Regional Round Table:

Chairperson:
S. Lakshminarayanan (India)

Vice-Chairpersons:
M. A. Hossain (Bangladesh)
Oh Kwangsok (Republic of Korea)

D. Agenda and organization of work

19. The Regional Round Table adopted the following agenda:

1. Opening of the Regional Round Table.
2. Election of officers.
3. Adoption of the agenda.

4. Characteristics of a knowledge-based global economy.

5. Implication of IT-led development for the competitiveness, development and management of new products and services.

6. Consensus-building, awareness creation and human resources development for the adoption and use of IT.

7. Knowledge-based economy and development.

8 Partnerships and international cooperation.

9. Adoption of conclusions and recommendations.

E. Adoption of the report

20. The Regional Round Table adopted the report on 22 June 2000.